

SYSTEM AND METHOD FOR AGGREGATE ONLINE ORDERING USING BARCODE SCANNERS

FIELD OF THE INVENTION

The present invention relates to the field of online shopping using barcode scanners. More specifically, the present invention provides an improved system and method for ordering from multiple vendors using a single barcode scanner and software application.

PARENT CASE TEXT

This application claims the benefit of provisional application No. 60/487,276 filed 07/16/2003.

BACKGROUND

Integrating barcode scanning technology into existing e-commerce websites is painfully long and complex. It requires an extensive integration process and many changes to the e-commerce application-provider. Any user wishing to utilize the barcode scanner services and products would need to first register with the providing company and obtain the required software and hardware. Once they have the software, the user must go through an extensive and sometimes very complicated setup process. Many changes are

1 necessary in tight network configurations in order to allow
2 users to install software on their machines. Also, the
3 software consumes system resources and requires a constant
4 internet connection. These are all factors that contribute
5 to degrade performance of a user's machine unnecessarily.

6 Existing e-commerce websites desiring to upgrade their
7 websites would need to undergo changes and modifications on
8 their end to handle data being passed to them from this
9 software. The e-commerce website needs to add complex
10 processes in order to handle and parse this data in
11 addition to their current processes. For large e-commerce
12 websites, this can mean causing parts (or even the whole)
13 of their site to be rendered unoperational if not carefully
14 planned and implemented.

15 The process of ordering using barcode scanners takes
16 the users away from their primary dealer's site. Since
17 this process would generally be handled by a stand-alone
18 software application, there is no relation between the two
19 distinct methods (traditional online ordering and ordering
20 using barcodes). It is very difficult to monitor the
21 environment in which the user is working and entering their
22 order. Since the user's atmosphere is different, there is
23 no correlation in the user's mind regarding this service

1 and the dealer's service; the two methods of ordering
2 appear to be completely separate.

3 In addition, any changes made to the existing e-
4 commerce platform affects the software application, thus
5 making the software unoperational and useless. This places
6 a very strict limitation as far as services the e-commerce
7 platform can make available to their customers, thereby
8 prohibiting growth.

9 Additionally, most stand-alone software applications
10 designed to integrate barcode scanning technology into e-
11 commerce websites are designed to interface only with a
12 single vendor. Therefore, if a user desires to use barcode
13 scanning technology to order from multiple vendors, the
14 user must install a software application from each vendor.
15 Also, the barcode scanners provided by each vendor may not
16 be the same; thereby requiring the user to remember which
17 barcode scanner must be used with which application.

18 Therefore, there clearly exists a need for a system
19 and method which enables users to place orders from
20 multiple vendors using a single software application and
21 barcode scanner. Such a system would allow users to order
22 from multiple vendors utilizing a single software
23 application.

24

1 **SUMMARY OF THE INVENTION**

2 The present invention provides a system and method
3 which allows users to place orders at multiple websites
4 using a single software application and barcode scanner.
5 The system of the present invention is designed to
6 facilitate quick online ordering using barcode scanning
7 technology in unison with a user-friendly software
8 application.

9 Prior to using the system of the present invention,
10 the user must install the required software on his/her
11 computer and acquire a barcode scanner. For some vendors,
12 the user must input a username and password into the
13 program so that the software program can later connect to
14 that particular vendor's website.

15 The barcode scanner may be any type of barcode scanner
16 which is currently available. The most common type of
17 barcode scanners are laser-based scanners. These scanners
18 have the advantage that they can scan data very quickly.
19 However, these types of scanners are usually only able to
20 decode a few types of barcode formats.

21 Optical barcode scanners, such as are disclosed in co-
22 pending U.S. Provisional Application No. 60/487,237
23 entitled "ScanZoom," have the advantage that their decoding
24 is controlled by software. Thus, optical barcode scanners

1 can be programmed to decode almost any type of barcode and
2 can be updated to decode newer barcode formats.

3 Additionally, if a mobile device is utilized as a
4 barcode scanner, the scanned barcode information can later
5 be transmitted to the processing application wirelessly,
6 thereby eliminating the need to connect the barcode scanner
7 directly to the computer.

8 To utilize the system of the present invention, a user
9 first scans the barcodes of the products which the user
10 desires to order. The user can either scan the barcodes
11 located on most products or the user can scan the barcodes
12 from a specially created catalogue which contains a barcode
13 next to each displayed item.

14 To order multiple quantities of a single item, the
15 user can scan the barcode multiple times or the user can
16 first scan the product barcode and then a "quantity"
17 barcode. For example, to order fifteen quantities of a
18 particular product, the user would first scan the barcode
19 related to the product, scan a quantity barcode indicating
20 a quantity of ten, and then scan a quantity barcode
21 indicating a quantity of five.

22 Once the user has scanned all the desired products for
23 ordering, the user connects the barcode scanner to the
24 computer and launches the software application of the

1 present invention. Depending upon the specific type of
2 scanner and/or software application, the barcode
3 information may be automatically acquired by the software
4 program or the user may have to initiate a manual upload.
5 The software application then creates shopping lists
6 according to the user's preferred vendors.

7 In each shopping list, the software program scans the
8 barcode information for instances of quantity barcodes.
9 When quantity barcodes are found, the software application
10 replaces the quantity barcode with X-1 copies of the
11 product barcode, where X refers to the quantity of the
12 quantity barcode.

13 Once these shopping lists have been created, the
14 software application launches the e-commerce website of
15 each vendor and sends the product information to each
16 vendor via XML (XML is the standard by which most e-
17 commerce websites communicate such types of information).
18 This causes the products to appear in the shopping cart of
19 each vendor along with the correct quantities. The user
20 may then review the shopping cart of each vendor and click
21 "order" or "purchase" once the user has verified each order
22 is correct.

23 The present invention can also be adapted to work with
24 Radio Frequency Identification ("RFID") labeling systems.

1 In this scenario, the barcode scanner would simply be
2 replaced with a RFID scanner. The only other change to the
3 system that would have to occur is that the barcode
4 information contained in the product databases would have
5 to be replaced with the corresponding RFID tag information.
6 A similar process can be utilized to allow the system of
7 the present invention to function with any tagging or
8 labeling system available or which may become available.

9 Therefore, it is an object of the present invention to
10 provide an ordering system capable of aggregating orders
11 for multiple vendors using a single software application
12 and barcode scanner.

13 It is an additional object of the present invention to
14 provide an ordering system which is rapid and user-
15 friendly.

16 Another object of the present invention is to provide
17 an ordering system capable of utilizing both standard and
18 proprietary barcode formats.

19 It is yet another object of the present invention to
20 provide an ordering system which requires minimum
21 modification of the vendors' existing e-commerce website.

22 An additional object of the present invention is to
23 provide an ordering system which uses vendor preferences to
24 automatically sort products and place orders.

1 These and other objects of the present will be made
2 clearer with reference to the following detailed
3 description and accompanying drawings.

4
5 **BRIEF DESCRIPTION OF THE DRAWINGS**

6 FIG. 1 depicts the system architecture for use with
7 the preferred embodiment of the invention.

8 FIG. 2 depicts a flowchart showing the steps utilized
9 for scanning and order processing in the preferred
10 embodiment of the invention.

11 FIG. 3 depicts an expanded flowchart of the uploading
12 step shown in FIG. 2.

13 FIG. 4 depicts an expanded flowchart of the barcode
14 information parsing step shown in FIG. 2.

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16 **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT(S)**

17 The following presents a detailed description of a
18 preferred embodiment (as well as some alternative
19 embodiments) of the present invention. However, it should
20 be apparent to one skilled in the art that the described
21 embodiment may be modified in form and content to be
22 optimized for a wide variety of situations.

23 Referring first to FIG. 1, shown is a system diagram
24 depicting the hardware configuration for use with the

1 preferred embodiment of the present invention. In this
2 figure, data carrier 101 is shown containing barcode 103.
3 Barcode 103 may either be a one or two-dimensional barcode.
4 However, it should be apparent to one skilled in the art
5 that barcode 103 may be any machine readable code. A user
6 utilizes scanner 105 to scan barcode 103. Scanner 105
7 converts the barcode information into a string of
8 characters which is recognizable by a computer.

9 Scanner 105 may be any type of scanner capable of
10 scanning barcodes. The most widely used type of barcode
11 scanners are laser-based scanners which are adapted to scan
12 one-dimensional barcodes. Barcode scanners designed to
13 scan two-dimensional barcodes are also currently available
14 but are more expensive than their one-dimensional
15 counterparts.

16 Scanner 105 may also utilize scanners which use
17 "optical intelligence" which is described in co-pending
18 Provisional U.S. Application No. 60/487,237 entitled
19 "ScanZoom." Optical intelligence allows any device (mobile
20 or stationary) equipped with a digital camera to function
21 as a barcode scanner.

22 Cradle 107 is used to connect scanner 105 to computer
23 109. Alternatively, scanner 105 may connect directly to
24 computer 109 via a direct cable connection using one of

1 computer 109's available ports (serial, USB, etc.).
2 Scanner 105 may also utilize a wireless connection to
3 connect to computer 109. For example, in the case where
4 scanner 105 is a mobile device utilizing optical
5 intelligence, such as a camera phone, all of the barcode
6 information can be transmitted to computer 109 wirelessly
7 utilizing a wireless connection (Bluetooth, WiFi, cellular
8 network, etc.). Computer 109 contains the software which
9 reads the information from barcode scanner 105 and
10 correctly processes it.

11 To function properly, the barcode processing software
12 located on computer 109 requires the use of one or more
13 databases. As shown in FIG. 1, computer 109 contains
14 quantity barcode database 110, individual account database
15 111, vendor database 113, identification barcode database
16 115, and vendor product database 117. Quantity database
17 110 is a lookup table which indicates the sum to which each
18 quantity barcode corresponds. Account database 111 stores
19 the login information of the user required to access each
20 of the selected vendor's website. Vendor database 113 is a
21 database which stores the information required to access
22 each vendor's website. Individual barcode database 115
23 contains information required by the software to decode the
24 quantity scanned from quantity barcodes. Vendor product

1 databases 117a - 117n contain a list of the products and
2 associated barcode numbers for each product of each vendor.
3 The function and purpose of each database in the processing
4 of the information acquired via scanner 105 will be
5 described in FIG. 2.

6 Internet 119 is used to connect computer 109 to vendor
7 websites 121a - 121n which allow for the aggregate
8 ordering. The internet connection may either be permanent,
9 such as a DSL or cable connection, or provided through a
10 modem.

11 Now referring to FIG. 2, shown is a flowchart
12 depicting the steps utilized for aggregate ordering in the
13 preferred embodiment of the present invention. In the
14 preferred embodiment, a user first scans all of the
15 products the user wishes to order in step 201 using barcode
16 scanner 105. To accomplish this, the user can either scan
17 the standard barcodes which are located on most products or
18 the user can utilize special catalogues provided by
19 different vendors which contain the printed barcode of each
20 item next to each product. If more than one quantity of a
21 certain product is desired, a user may utilize quantity
22 barcodes to indicate the desired quantity of items.
23 Quantity barcodes are utilized by first scanning the

1 barcode of the product and then scanning the quantity
2 barcode(s).

3 Once all of the products have been scanned in step
4 201, the user uploads the scanned barcode information to
5 computer 109 in step 203 utilizing cradle 107.
6 Alternatively, scanner 105 could be connected directly to
7 computer 109 through a wired or wireless connection. The
8 software located on computer 109 facilitates the uploading
9 of the barcode information by synching scanner 105 with
10 computer 109. The barcode information is uploaded to the
11 computer as a character string, wherein different portions
12 of the character string correspond to the different
13 barcodes scanned.

14 If RFID tags are utilized instead of barcodes, scanner
15 105 would be a RFID scanner. The process of uploading the
16 information to computer 109 would occur in a similar manner
17 to uploading barcode information.

18 After the barcode information has been uploaded to
19 computer 109, the software next processes the quantity
20 barcodes in step 205. As shown in FIG. 2A, the software
21 first searches the uploaded barcode information for all
22 instances of quantity barcodes in step 221 and flags the
23 results. The software next uses quantity barcode database
24 110 to associate each quantity barcode with a particular

1 sum in step 223. The software then systematically replaces
2 each quantity barcode with the number of copies of the
3 product barcode which immediately precedes it in step 225.
4 For example, if the software found a barcode for a heavy-
5 duty stapler followed by a quantity barcode indicating a
6 quantity of five, the software would replace the quantity
7 barcode with four additional copies of the barcode for the
8 heavy-duty stapler.

9 Referring back to FIG. 2, the software next assigns
10 each barcode to a particular vendor based upon the user's
11 predetermined vendor preferences in step 207. The order of
12 preference for the vendors is stored in vendor database
13 113. The software accomplishes this by processing each
14 barcode individually. As shown in FIG. 2B, each of the
15 barcodes is first checked to see if it is located in the
16 first preferred vendor product database 117a in step 241.
17 All of the barcodes found located in database 117a are
18 added to a shopping cart list which corresponds to the
19 first preferred vendor in step 243. If all of the barcodes
20 are found in the first preferred vendor database 117a, the
21 software proceeds to step 209. However, if some barcodes
22 are not found, the software next searches second preferred
23 vendor database 117b and creates a second shopping cart
24 list which corresponds to the second preferred vendor in

1 step 245. This process is repeated using the list of
2 preferred vendors until each of the uploaded barcodes has
3 been added to a shopping cart list corresponding to one of
4 the preferred vendors in step 247. The products which
5 could not be found in any database are stored in a separate
6 list in step 249. The software then displays a message to
7 the user which indicates which products could not be
8 located in step 251.

9 To allow the system of the present invention to
10 function with a RFID tagging system, the barcode
11 information in vendor databases 117a - 117n simply has to
12 be replaced with the corresponding RFID information.

13 Next, referring back to FIG. 2, the software sends
14 each of the created shopping cart lists to each of the
15 vendors' e-commerce websites 121a - 121n using XML via
16 Internet 119 in step 109. Currently, XML is the standard
17 method of transmitting such information. However, it
18 should be apparent to one skilled in the art that
19 additional methods of transmitting such information will
20 become available and can be utilized with the present
21 invention. If login or account information is required by
22 some vendors, the software utilizes vendor account database
23 111 to transmit the login information along with the
24 shopping cart list. A web browser is opened for each the

1 e-commerce websites utilized. The shopping cart of each
2 website is displayed populated with the uploaded items and
3 corresponding quantities.

4 The user may then complete the ordering in step 211 by
5 confirming that each shopping cart has the correct items
6 and quantities. Typically, the e-commerce websites can be
7 used to add/remove items and/or change quantities if the
8 user desires. Once the user is satisfied with each
9 shopping cart list, the user may execute the order on each
10 e-commerce website.

11 Referring next to FIG. 3, shown is an alternate
12 embodiment of the present invention in which identification
13 barcodes are utilized. To utilize this embodiment requires
14 that the user first must obtain catalogues from all of the
15 vendors from which the user desires to order products. In
16 each catalogue, a barcode is provided next to the display
17 or description of each item. The barcode can either be a
18 proprietary barcode assigned to each item by the vendor or
19 it may be the standard barcode which is assigned to each
20 product (e.g., UPC, ISBN, etc.).

21 The user must also install the software of the present
22 invention on his/her computer and acquire a barcode
23 scanner. For some vendors, the user must input a username
24 and password into the program so that the software program

1 can later connect to that particular vendor's website.

2 This information is stored in vendor account database 111.

3 Once the user has acquired the correct catalogues and
4 barcode scanner and installed the software, the user is
5 ready to utilize the system of the present invention.

6 First, utilizing scanner 105, the user scans the

7 identification barcode which has been assigned to each

8 vendor of the system in step 301. The identification

9 barcode may be printed directly on the catalogue or on any

10 data carrier capable of being scanned by a barcode scanner.

11 Next, the user scans all the products from the vendor's

12 catalogue which the user desires to order in step 303. To

13 order multiple quantities of a single item, the user can

14 scan the barcode multiple times or the user can first scan

15 the product barcode and then a quantity barcode. For

16 example, to order fifteen quantities of a particular

17 product, the user would first scan the barcode related to

18 the product, scan a quantity barcode indicating a quantity

19 of ten, and then scan a quantity barcode indicating a

20 quantity of five.

21 A user may also order items from a particular vendor

22 by scanning the standard barcodes (e.g., UPN, ISBN, etc.)

23 located on most products. For example, if a user could not

24 find the entry for a particular soft drink in the vendor's

1 catalogue, the user could scan the UPC barcode directly off
2 of the soft drink itself.

3 After the user has scanned all of the desired products
4 for the first vendor, the user next scans the
5 identification barcode of the next vendor in step 305. The
6 user may then scan all of the products which the user
7 desires to order from the second vendor. This process is
8 repeated for each vendor through which the user desires to
9 place an order.

10 Once the user has scanned all the desired products for
11 ordering, the user connects scanner 105 to computer 109 and
12 launches a software application to upload the barcode
13 information in step 307. Depending upon the specific type
14 of scanner and/or software application, the barcode
15 information may be automatically acquired by the software
16 program or the user may have to initiate a manual upload.
17 The software application then separates the barcode
18 information according to each vendor and creates a shopping
19 list for each vendor in step 309. The identification
20 barcode is used to indicate which products should be added
21 to which shopping list.

22 Next, in step 311, the software program replaces the
23 quantity barcodes in each shopping list utilizing the
24 procedure already described in FIG. 2A. The software

1 application then sends each shopping list to each vendor's
2 e-commerce website in step 313 via XML (XML is the standard
3 by which most e-commerce websites communicate such types of
4 information). A web browser is then launched on computer
5 109 showing each shopping cart fully populated with the
6 scanned items in step 315. The user may then review the
7 shopping cart of each vendor and click "order" or
8 "purchase" once the user has verified each order is correct
9 in step 317. This process is advantageous because it does
10 not require the utilization of a multitude of vendor
11 product databases 117 which may take a great deal of memory
12 to store depending upon the size of each database.

13 While the foregoing embodiments of the invention have
14 been set forth in considerable detail for the purposes of
15 making a complete disclosure, it should be evident to one
16 skilled in the art that multiple changes may be made to the
17 aforementioned description without departing from the
18 spirit of the invention.